

Ciba Specialty Chemicals Corporation
USA

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Via Federal Express

November 24, 1998

Document Control Office (7407)
Room G99 East Tower
Attention: Section 8(e)
Office of Pollution Prevention and Toxics
Environmental Protection Agency
401 M Street, SW
Washington, DC 20460-0001

MR 12691

Contains No CBI

Subject: TSCA 8(e) Notice - CGI 819 (Irgacure 819)

Contains No CBI

Dear Section 8(e) Coordinator:

This letter and enclosed report does not contain Confidential Business Information.

In accordance with EPA's March 16, 1978 Policy Statement on Section 8(e) reporting under the Toxic Substances Control Act (TSCA), the EPA's June, 1991 TSCA Section 8(e) Reporting Guide, Ciba Specialty Chemicals Corporation wishes to bring to the attention of the Environmental Protection Agency results observed in a bioaccumulation study conducted with CGI 819 (Irgacure 819). Irgacure 819, a commercial photoinitiator, is phosphine oxide, phenylbis(2,4,6-trimethyl benzoyl)-; CASRN 162881-26-7.

We are enclosing a copy of the study entitled, "**Test on the Degree of Bioaccumulation of CGI 819 in Carp, *Cyprinus carpio***". In this study, a 48-hour LC₅₀ of 84 ppb in orange-red killfish was obtained.

Based upon current EPA guidelines, it is felt these results warrant reporting under TSCA 8(e). Please call the undersigned if you have any questions concerning this submittal.

Respectfully,

Ciba Specialty Chemicals Corporation



Thomas Barber, Manager
Product Registration and Compliance



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540 White Plains Road
P.O. Box 2005
Tarrytown, NY 10591-9005

Tel. 914 785 2000

Value beyond chemistry

Test on the degree of bioaccumulation of CGI 819
in carp, *Cyprinus carpio*

Rep. No. G4-9726 • C87 • CP

— A b s t r a c t —

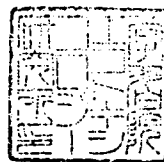
November 11, 1997

Institute of Ecotoxicology

Gakushuin University

1-5-1 Mejiro, Toshima-ku,

Tokyo, 171 Japan



Sponsor: CIBA SPECIALTY CHEMICALS Ltd.

Test Institute

Name Institute of Ecotoxicology, Gakushuin University
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Telephone +81 3 5992 1019
Director Prof. Dr. Tadayoshi Kan

Test Personnel

Personnel engaged in
conduct of the study

M. Takamatsu.
Mitsuko Takamatsu

Study Director

M. Takamatsu.
Mitsuko Takamatsu

Management

T. Kan

Prof. Dr. Tadayoshi Kan

Quality Assurance Person

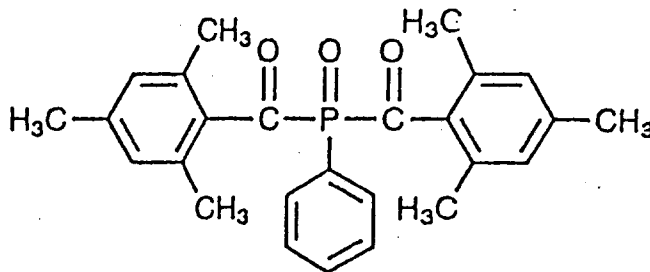
Miki. Goto
Prof. Dr. Mikiyasu Goto

1. Test Substance

Chemical name: Bis(2,4,6-trimethylbenzoyl)phenylphosphine oxide

Abbreviation: CGI 819

Structural formula:



Molecular formula: $C_{26}H_{27}O_3P$ (M.W. 418.46)

Purity: 98.4%

2. Purpose

The purpose of this test is the measurement of the degree of accumulation of CGI 819 in the carp, *Cyprinus carpio*.

3. Outline of the test

The carp was kept in the aquarium where CGI 819 was introduced continuously to maintain constant concentration. Bioconcentration factor (BCF) was calculated as the ratio of the concentration of CGI 819 between fish and the exposure water taken periodically for analysis. The information on the degree of bioaccumulation of CGI 819 was obtained by correlation curve of concentration factors vs. time.

4. Test method and conditions

4.1 Test method

The test was conducted in accordance with OECD Guidelines for Testing of Chemicals No. 305C (adopted 12 May, 1981).

4.2 Test conditions

The test conditions are summarized in the following Table.

Exposure level	0.001 mg ℓ^{-1}
Test period	
Initiated:	October 7, 1997
Completed:	November 4, 1997
Test fish species	Japanese carp, <i>Cyprinus carpio</i>
Average body weight	20.8 \pm 1.2 g
Average body length	9.0 \pm 0.3 cm
Lipid content	4.0 \pm 0.3 %
Test system	Continuous flow-through system
Test aquarium	Glass aquarium (100 ℓ)
Flow rate	432 ℓ / day
Test period	4 weeks
Exposure level (mg ℓ^{-1})	0.001
Dissolved oxygen(mg ℓ^{-1})	7.1 - 7.4
Analysis of test water(day)	3rd, 7th, 14th, 21st and 28th days
Analysis of test fish (day)	7th, 14th, 21st and 28th days
Temperature	24.3 \pm 0.5 $^{\circ}\text{C}$

4.3 Analytical means

The concentrations of sample extracted from fish body and test water were determined by HPLC.

5. Test results

Bioconcentration factors(BCF) are shown in the Table below.

Bioconcentration factors

n = 2

Exposure (mg ℓ^{-1})	after 7 days	14 days	21 days	28 days
0.001	< 5 < 5	< 5 < 5	< 5 < 5	< 5 < 5

6. Conclusion

The bioconcentration factor of CGI 819 is less than 5 and CGI 819 is not accumulative in fish.

7. Remarks

Appearance of test fish was normal by aquarium-side observations.

8. Appendix

48 hr. LC50 in orange-red killifish, *Oryzias latipes* was 84ppb.

ENTRY FORM

CAPNUM	LTR	DATE	CBI	CASNO	CONCERN	AI	SOLUBILITY
14322	a	1198		162881267		98.4	NS
CHEMNAME							PHYSTATE
Bis(2,4,6-trimethybenzoyl)phenylphosphine oxide, flow-through							NS
ORGANISM	DURATION	ENDPOINT	CODE	TOXVALUE	UNITS	MELTINGPT	
Carp, Cyrinus carpio	28d	BCF	<	5		NS	
COMMENTS							

ENTRY FORM

CAPNUM	LTR	DATE	CBI	CASNO	CONCERN	AI	SOLUBILITY
14322	a	1198		162881267	HIGH	98.4	NS

CHEMNAME

Bis(2,4,6-trimethylbenzoyl)phenylphosphine oxide, flow-through

PHYSTATE

NS

ORGANISM	DURATION	ENDPOINT	CODE	TOXVALUE	UNITS
Japanese carp, C. carpio	48h	LC50		83	ppb

MELTINGPT

NS

COMMENTS